Abstracts

Gregory L. Moneta, MD, Section Editor

A Randomized Trial of Decision-Making in Asymptomatic Carotid Stenosis

Silver B, Zaman IF, Ashraf K, et al. Neurology 2012;78:315-21.

Conclusion: Presentation format (information framing) has a strong influence on patient decision making with regard to management of asymptomatic carotid stenosis.

Summary: Randomized trials of asymptomatic carotid stenosis have shown a modest reduction in stroke risk when surgery is added to best medical therapy. One can express, when discussing with patients, this difference in multiple ways. The difference can be expressed as overall absolute risk reduction (11% vs 5% over 5 years), relative risk reduction (50% over 5 years), annualized absolute risk reduction (2% vs 1% per year over 5 years), absolute disease free survival (89% vs 95% over 5 years), or qualitative description of benefit, such as significantly less strokes with surgery vs medical therapy alone. There are also variables that may determine how patients respond to proposed alternative treatments, including patient age, sex, or race, as well as presenter age, sex, or race and how the information is presented (so-called information framing, Nikolajevic-Sarunac J et al, J Gen Intern Med 1999;14:591-8). This study sought to evaluate whether different presentation formats, presenter factors, and patient factors affected decision making regarding management of asymptomatic carotid stenosis. Subjects were recruited through a neurology clinic. All subjects were aged >18 years, without known carotid stenosis. Once recruited, subjects were randomized to a 30-second video with one of five presentation formats (absolute risk, absolute event-free survival, annualized absolute risk, relative risk, and qualitative description). Presentations were delivered by one of four presenter physicians (black women, white women, black men, and white men). After the presentation, subjects completed a 1-page form regarding background demographics and their decision regarding treatment choice. The video was watched and the survey completed by 409 subjects; overall, 48.4% chose surgery. The format of presentation strongly predicted choice of surgery (qualitative [64%], relative risk [63%], absolute risk [43%], absolute event-free survival [37%], and annualized absolute risk [35%]; $P < .001$). There was a trend for younger age (mean age 52 vs 55 years; $P = .054$), male sex (53% vs 45%; $P = .08$), and advanced education (42% for high school education or less vs 52% for more than high school education; $P = .052$) to predict a choice for surgery. Sex and race of presenter and race of subject had no influence of the choice of treatment.

Comment: The basic message is that it matters how you talk to patients. There are, however, multiple limitations to this study. The authors point out that the participants were only given information for 30 seconds and were not given the opportunity to ask questions to clarify information. It is therefore unclear whether the participants actually understood the message transmitted. Also, the subjects were not actual patients, and the entire cohort came from a specialty clinic of an urban hospital, making generalization to patients in multiple settings problematic. Finally, the participants did not actually have carotid stenosis. Despite the limitations, the observations do provide a framework for understanding the potential influences and variables in medical decision making, especially regarding how complex information is presented to the patient. It is somewhat gratifying to note that race and sex were not important variables influencing patient decision in this study.

Comparable Effectiveness of Endovenous Laser Ablation and High Ligation With Stripping of the Great Saphenous Vein: Two-Year Results of a Randomized Clinical Trial (RELACS Study)

Rass K, Frings N, Glowacki P, et al. Arch Dermatol 2012;148:49-58.

Conclusion: High ligation and stripping (HLS) and endovascular laser treatment (EVLT) are comparably safe and effective procedures to treat great saphenous vein (GSV) incompetence.

Summary: GSV incompetence can be treated with HLS, EVLT, and radiofrequency ablation (RFA). Although there are large case series of all modalities of treatment for GSV incompetence, a limited number of randomized trials have compared these therapies. This is the largest randomized trial to date comparing EVLT with GSV stripping. The trial was conducted in two centers and included 400 patients with GSV incompetence. Patients were assigned (1:1) to EVLT or HLS from September 2004 through March 2007. There were 185 limbs treated with EVLT per protocol and 161 limbs treated with HLS. The primary study objective was to determine clinically recurrent varicose veins after surgery. Other end points included determination of duplex-detected saphenofemoral reflux recurrence, clinical venous severity scoring using the Homburg varicose vein severity score, venous refill times, quality of life determined with the chronic venous insufficiency questionnaire, and adverse effects and visual analog scale–based evaluations of patient satisfaction. The percentage recurrence of varicose veins after surgery was 16.2% in the EVLT group vs 23.1% in the HLS group, which was similar. Although saphenofemoral reflux, as determined by duplex scanning, was more frequent after EVLT (17.8% vs 1.3%, $P < .001$) at 2 years, both treatments resulted in equal improvement of the Homburg varicose veins severity score and disease-related quality of life scores. There were more adverse effects, such as phlebitic reaction, tightness, and dyspigmentation, with EVLT than with HLS. EVLT, however, provided minor advantages in patient evaluation of cosmetic outcome at the 2-year follow-up.

Comment: This is the largest randomized trial comparing an endovenous approach for the obliteration of the GSV with HLS. The results are generally compatible with other studies, suggesting little difference between EVLT and HLS with regard to late and early outcomes. A review of the literature as a whole, with regard to endovenous ablation, reveals about 10 randomized trials since 2005 comparing HLS with various forms of endovenous ablation. The trials are very heterogeneous, and only two directly compared EVLT with RFA. Nevertheless, taken as a whole, these trials suggest relatively equal efficacy of all techniques for treatment of GSV insufficiency, with perhaps minor advantages for RFA with regard to postoperative pain and early return to work and normal activities.

Fondaparinux for Isolated Superficial Vein Thrombosis of the Legs: A Cost-Effectiveness Analysis

Blondon M, Righini M, Bounameaux H, et al. Chest 2012;141:321-9.

Conclusion: Fondaparinux for 45 days is not cost-effective when treating patients with isolated superficial venous thrombosis (SVT) of the legs.

Summary: SVT is a frequent condition, and at the time diagnosis, up to 25% of patients may have associated deep venous thrombosis or pulmonary embolism (Decousus H et al, Ann Inter Med 2010;152:218-24). However, patients recruited for the Decousus study were from vascular medicine specialists and may thus represent a population of more severe cases. Indeed, the clinical impression is that although isolated SVT can on rare occasion be associated with significant VTE events, in most cases, the disease has a very benign course, at least in the short-term. Treatment of isolated SVT is therefore controversial. The recently published Comparison of Arixtra in Lower Limb SVT With Placebo (CALISTO) study randomized 3000 patients with isolated lower extremity SVT to prophylactic fondaparinux (2.5 mg daily for 45 days) vs placebo (Decousus H et al, N Engl J Med 2010;363:1222-32). With respect to the composite outcomes of death, deep venous thrombosis, and extension or recurrence of SVT, fondaparinux was superior to placebo. There was, however, a high number needed to treat to avoid one complication such as pulmonary embolism (n = 300). Fondaparinux is expensive, and therefore, the authors of this study sought to evaluate its cost-effectiveness by creating decision-tree modeling with data derived primarily from the CALISTO study and published literature. The decision-tree model compared fondaparinux (2.5 mg daily for 45 days) vs no treatment of SVT. The model included all clinical events associated with SVT, its treatment, complications, and all respective quality-adjustment factors. Measured outcomes included VTE clinical events (major hemorrhage, death) quality-adjusted life-years, (QALYs), cost, and incremental cost-effectiveness ratios (ICERs). A lifetime time horizon analysis was used from a health care system perspective. One-way probabilistic sensitivity analysis was used to evaluate parameter uncertainty. In 10,000 patients, they estimated that fondaparinux would prevent 123 VTE events and two deaths. On a per-patient basis, incremental QALY compared with no treatment was 0.04/day at an incremental cost of $1,734. This results in an ICER of $500,000 per QALY. ICER remained >$100,000 per QALY with a one-way sensitivity analysis. Based on probabilistic sensitivity analysis, the probability that fondaparinux was cost-effective was 1% at a willingness-to-pay $100,000 per QALY.

Comment: The data indicate that fondaparinux as a blanket treatment for SVT of the lower extremities is not anywhere near cost-effective based on the commonly accepted threshold of ~$50,000 per QALY to guide recommendations in most clinical situations. The authors did not address whether improved cost-effectiveness could be achieved by targeting specific subgroups with SVT with a likely higher incidence of VTE. Such groups may include men, those with severe chronic venous insufficiency, SVT without varicose veins, and patients with a history of cancer, previous VTE, or a known thrombophilia. Future studies of SVT potentially could yield more robust recommendations for treatment if higher-risk subgroups were targeted in those studies.